Amendments to the Drawings:

The attached sheets of drawings include changes to FIG. 4. The replacement sheet, replaces the original sheet. The annotated sheet shows that elements 42, 44 and 46 have been renumbered as elements 46, 48 and 49, respectively.

REMARKS/ARGUMENTS

Applicant appreciates the thorough examination of the present application, as evidenced by the first Official Action. The first Official Action objects to the specification, suggesting that elements 46 and 49 described on page 12 of the specification should actually refer to elements 42 and 46, respectively. Applicants respectfully submit, however, that instead of the elements including incorrect reference numbers in the specification, the figures (FIG. 4) call out incorrect reference numbers for those elements. Accordingly, Applicants have amended FIG. 4 to correct this inadvertent typographical error. More particularly, Applicants have amended FIG. 4 to renumber elements 42, 44 and 46 as elements 46, 48 and 49, respectively. Applicants therefore respectfully submit that the objection to the specification is overcome.

Initially, in response to the Examiner's request, Applicant submits herewith copies of the six articles listed on page 2 of the PTO 1449 submitted with the Information Disclosure Statement filed on September 15, 2003. Applicant notes, however, that copies of the six articles were sent along on September 15, 2003, and as such, should be deemed to have been timely filed on that date.

The first Official Action also rejects Claims 1-5 and 9-13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,421,214 to Packard et al.; and rejects the remaining claims, namely Claims 6-8, under 35 U.S.C. § 103(a) as being unpatentable over the Packard patent, in view of U.S. Patent No. 6,049,143 to Simpson et al. As explained below, Applicants respectfully submit that the claimed invention of the present application is patentably distinct from the Packard and Simpson patents, taken individually or in combination. As such, Applicants respectfully traverse the rejections of the claims as being anticipated by, or unpatentable over, the Packard patent or the combination of the Packard and Simpson patents. In view of the amendment to FIG. 4 and the remarks presented herein, Applicants respectfully request reconsideration and allowance of all of the pending claims of the present application.

The Packard patent provides a self-testing arc fault or ground fault detector that includes arc fault detecting circuitry and components. As disclosed, the detector includes a processor that activates a silicon-controlled rectifier (SCR) when it detects a characteristic of a fault. Activating the SCR, in turn, activates a trip mechanism of the detector which directs a circuit

interruptor to open, thereby restricting power to a load. The Simpson patent, on the other hand, provides an electrical connection safety apparatus that eliminates the risk of fire or electric shock associated with current overload faults in electrical systems. As disclosed, the apparatus senses or detects the electrical current rating of an electrical appliance or electrical cord or connector that is plugged into an electrical outlet. Then, if the current rating is exceeded, the apparatus disconnects power to the appliance or outlet and connector.

One aspect of the present invention, as reflected in independent Claim 1, provides a system of remotely detecting an electric arc event. According to this aspect, the system includes at least one slave controller disposed proximate at least one load and electrically connected to the at least one load via at least one conductor. The slave controller includes at least one solid-state switch and at least one measuring element. The solid state switch is capable of controllably altering the input current to the load. The measuring element, on the other hand, is capable of measuring at least one parameter associated with the load and the solid-state switch, such that the solid-state switch controllably alters the input current to the load according to the parameter. In addition to the slave controller, the system includes at least one arc fault detector capable of detecting an electric arc event, where the arc fault detector is electrically connected to the conductors between the slave controller and the load.

As suggested above, like the claimed invention of independent Claim 1, the Packard and Simpson patents relate to protecting a load from electrical faults such as electric arc events. Unlike the claimed invention, however, neither the Packard patent nor the Simpson patent teach or suggest, individually or in combination, a system for detecting an electric arc event that includes, in addition to an arc fault detector, one or more measuring elements for measuring parameter(s) associated with the load and the solid-state switch such that the solid-state switch controllably alters the input current to the load according to the parameter. In this regard, Applicants respectfully submit that although the Packard patent may include features for detecting electric arc events (although expressly not admitted as such), the Packard patent does not teach or suggest the parameter measuring/input current altering feature of the claimed invention.

Applicants note that the Official Action cites column 4, line 56 through column 5, line 22 of the Packard patent as disclosing this feature of the claimed invention. Properly interpreted, this portion of the Packard patent explains the manner by which a processor restricts power to a load when it detects a characteristic of a fault, as explained above. The processor does not measure any parameters, as do the measuring element(s) of the claimed invention, but instead detects a characteristic of a fault by comparing a signal to a pre-established characteristic. Moreover, even if it could be reasonably suggested that the signal received by the processor of the Packard system corresponds to a parameter measured by the processor, no where does the Packard patent teach or suggest that the processor or any other element measures at least one parameter associated with the load and the solid-state switch, as does the measuring element of the claimed invention. The Packard system does include sensors **16** and **28** for detecting faults in a conductor and, accordingly, it could be suggested that the Packard patent discloses measuring a parameter of a conductor to thereby detect faults in the conductor. No where, however, does the Packard patent teach or suggest that its system measures parameters associated with other of the system elements, much less the load or any switches.

Applicants therefore respectfully submit that the claimed invention of independent Claim 1, and by dependency Claims 2-5, is patentably distinct from the Packard patent. Applicants also respectfully submit that the claimed invention of independent Claim 9 recites subject matter similar to that of Claim 1. In this regard, like independent Claim 1, independent Claim 9 recites, in addition to detecting an electric arc event, measuring parameter(s) associated with a load and altering input current to the load according to the parameter(s). Thus, Applicants respectfully submit that independent Claim 9, and by dependency Claims 10-13, are also patentably distinct from the Packard patent for at least the same reasons given above with respect to independent Claim 1. Accordingly, Applicants respectfully submit that the rejection of Claims 1-5 and 9-13 under 35 U.S.C. § 102(b) as being anticipated by the Packard patent is overcome.

The Official Action also rejects Claims 6-8 as being unpatentable over the Packard patent in view of the Simpson patent. Independent Claim 6 of the present invention provides a method of remotely detecting an electric arc event. The method includes configuring a processing element that controls input current through at least one switch to at least one load via at least one

conductor. As recited, configuration of the processing element is based upon one or more characteristics including a current rating of each load, a voltage rating of each load, a maximum current rating of each switch and/or a temperature rating of each switch. The method also includes operating each switch in an on mode where each switch permits the input current from flowing to a respective load, and thereafter controlling the input current to the load. To control the input current, the claimed invention provides for monitoring one or more parameters associated with each switch and respective load including the input current to the load, a voltage drop across the load, the input current through the switch and/or a temperature of the switch. As the parameters are monitored, a condition of each switch and respective load is determined based upon one or more characteristics and/or one or more parameters. In addition, each switch is operated in either an on mode or an off mode depending upon the condition of the respective loads, with each switch being operated in the off mode when an electric arc event is detected.

The Official Action alleges that the Packard patent discloses all of the elements of the method of independent Claim 6, but does not disclose the characteristics of voltage rating of each load, maximum current rating of each switch or temperature rating of each switch, or disclose the parameters of voltage drop across the load, input current through the switch or temperature of the switch. Nonetheless, the Official Action alleges that the Simpson patent discloses these character and parameter features, and that it would be obvious to one skilled in the art to combine the teachings of the Packard and Simpson patents to disclose the method of independent Claim 6.

In contrast to the allegations of the Official Action, the Packard patent does not teach or suggest configuring a processing element based upon the current rating of each load (characteristic), as recited by independent Claim 6. As explained above, the Packard patent discloses a system that includes sensors **16** and **28** for detecting faults in a conductor. The Packard patent therefore does not operate based upon characteristics or parameters of a load, as does the claimed invention, but instead operates to detect faults in conductors. Applicants do note that the Simpson patent does appear to disclose the use of a load current rating. Applicants also respectfully submit, however, that one skilled in the art would not be motivated to modify the Packard system by configuring the processor with the current rating of the load, as could be

suggested is disclosed by the Simpson patent. At the least, one skilled in the art would not be motivated to modify the Packard system to so configure the processor since such a modification would not result in any difference in operation of the processor in detecting a characteristic of an arc event. At the most, such a modification would significantly alter the principle of operation of the Packard system. And as stated in M.P.E.P. § 2143.01, "[a] proposed modification cannot change the principle of operation of a reference."

Also in contrast to the allegations of the Official Action, the Packard patent does not teach or suggest monitoring at least one parameter associated with each switch and respective load, as recited by independent Claim 6. Again, as explained above, the Packard system detects a characteristic of a fault from sensor signals representative of faults in a conductor. Thus, instead of monitoring parameters associated with each switch and respective load, as recited by the claimed invention, the Packard patent discloses, at best, monitoring a parameter of a conductor.

Further in contrast to the allegations of the Official Action, the Simpson patent does not teach or suggest configuring a processor based upon the characteristics of voltage rating of each load, maximum current rating of each switch or temperature rating of each switch, or monitoring the parameters of voltage drop across the load, input current through the switch or temperature of the switch. As indicated above, the Simpson patent does appear to operate based upon a current rating of a load. The Simpson patent even appears to disclose measuring the load current based upon the voltage output of a load current sensing transformer, as well as measuring the temperature of a load (lamp fixture). In either event, however, the Simpson patent does teach or suggest configuring a processor or otherwise monitoring characteristics or parameters related to the voltage of the load (electrical appliance in Simpson), current through a switch or temperature of a switch, as recited by the claimed invention.

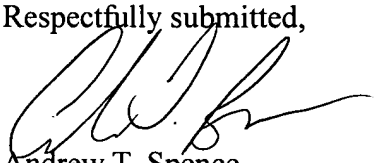
Applicants therefore respectfully submit that the claimed invention of independent Claim 6, and by dependency Claims 7 and 8, is patentably distinct from the Packard and Simpson patents, taken individually or in combination. Accordingly, Applicants respectfully submit that the rejection of Claims 6-8 under 35 U.S.C. § 103(a) as being unpatentable over the Packard patent in view of the Simpson patent is overcome.

CONCLUSION

In view of the amendment to FIG. 4, and the remarks presented above, Applicants respectfully submit that all of the claims of the present application are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



Andrew T. Spence
Registration No. 45,699

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

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Sarah B. Simmons

APPENDIX

1. Annotated Sheet Showing Changes (FIG. 4)

2. Replacement Sheet (FIG. 4)

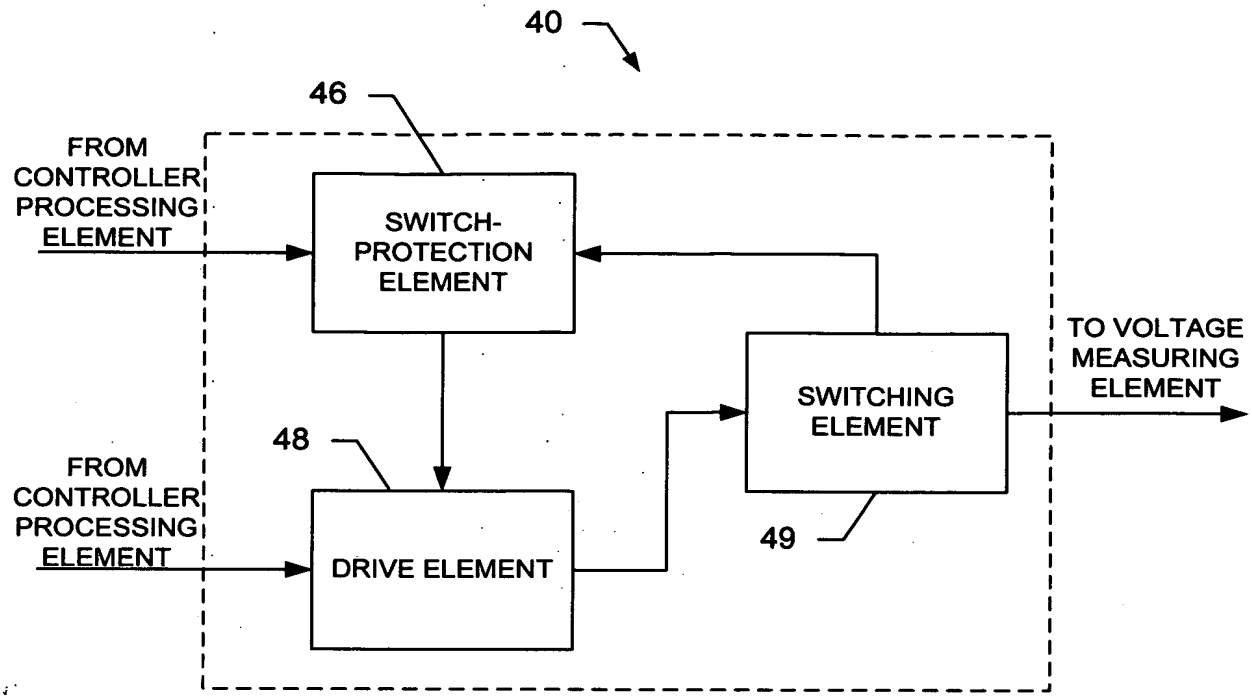

FIG. 4.